

**ABSTRACT**

A heat transfer regulating mixture having a metallic component A with a melting point  $T_A$  and a particulate ceramic component B which is non-wettable by the metallic component A, non-reactive therewith and which has a melting temperature  $T_B$  which is higher than both the temperature  $T_A$  and a desired operating temperature  $T_D$  which is also higher than  $T_A$ . The metallic component A and the particulate ceramic component B and the respective amounts will typically be selected to have a higher thermal resistivity above  $T_A$  than below  $T_A$ . The heat transfer regulating mixture may be incorporated in a thermal flux regulator having the mixture within an enclosure surrounding a heat generating reactor structure.

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